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ABSTRACT

This paper was commissioned in part to provide an institutional memory for the Network Advisory Committee, not only for its new members but for the entire library and information service community. The deliberations of this committee, which has been the catalyst for a number of significant efforts in networking, are presented in this detailed report. Introductory materials provide background information on the establishment of the committee. The first year (1976) and developments during the second phase (1977 to 1980) are then described. Finally, a more detailed report on the third phase (1981-present) is presented in the following subsections: Ownership and Distribution of Bibliographic Data; Nationwide Network Governance; Resource Sharing; Public/Private Sector Interactions; Telecommunications; Information Economy; Developments in Networking since the 1960s; and Special Libraries in Networks and Cooperatives. A retrospective review concludes the report. A chronology is included as Appendix A; a selective bibliography of items published by or for the Network Advisory Committee as Appendix B; and a list of Network Advisory Committee Members as Appendix C. (THC)

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NETWORK DEVELOPMENT AND MARC STANDARDS OFFICE

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Network Advisory Committee

Its First Decade

Prepared by Lenore S. Maruyama

Maruyama Associates, Inc.

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THE LIBRARY OF CONGRESS NETWORK ADVISORY COMMITTEE

ITS FIRST DECADE

Prepared by

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Network Development and MARC Standards Office
Library of Congress
Washington, D.C.

1985

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FOREWORD

One reason for commissioning this paper is that we need to provide an "institutional memory" for the Network Advisory Committee, not only for its new members but for the entire library and information service community. I realized several months ago that I was one of only three persons still associated with the advisory committee who had been there from the beginning. The advisory committee's effectiveness in its present mode of operation might lull us into thinking that it was always this way. The lessons of the past can be instructive as we attempt to cope with the problems of the present and plan for the future; therefore, I asked Lenore Maruyama, who had participated in most of the early meetings and other activities of the committee while employed by the Network Development and MARC Standards Office, to write this report for the Library of Congress.

The Network Advisory Committee has also been the catalyst for a number of significant efforts in networking, but its deliberations do not appear to be reaching a large segment of the profession. I hope that this paper will rectify that situation and pique the interest of readers sufficiently for them to get the detailed reports or accounts.

I would like to thank Peter Gellatly, editor of The Serials Librarian, and Bill Cohen, publisher, Haworth Press, for permission to reuse portions of an article written by Ms. Maruyama, "Nationwide Networking and the Network Advisory Committee," which appeared in The Management of Serials Automation; Current Technology & Strategies for Future Planning (New York: Haworth Press, 1982). My thanks also to Sigrid Harriman of the Network Development and MARC Standards Office, Library of Congress, for assisting Ms. Maruyama in ferreting out the papers and other documents pertaining to Network Advisory Committee activities.

I would like to express my appreciation to the Library of Congress and the Council on Library Resources for their support of the Network Advisory Committee over the years. And finally, my thanks to the member organizations and representatives serving on the advisory committee, past and present, who have unstintingly given their time and energies to the work of the committee.

Henriette D. Avram, Chair
Network Advisory Committee

1. INTRODUCTION

In late 1975, Fred C. Cole and Lawrence G. Livingston of the Council on Library Resources met with William J. Welsh and Henriette D. Avram of the Library of Congress to discuss the possibility of bringing together a group of people involved in nationwide networking and network-related organizations to consider the networking issues that had started to confront the library and information service community. From these informal beginnings, the Library of Congress Network Advisory Committee evolved into an organization with twenty-seven institutional members capable of addressing a wide range of problems.

What networking issues faced the profession in the mid-1970s? A proliferation of network organizations already existed, but the problems concerning aspects of automated information retrieval, bibliographic or authority control, or resource sharing beyond the confines of individual institutions or geographic areas were not being addressed with any consistency. The technology associated with library automation and networking was still, in large part, a mystery to most librarians. The economics of networking and resource sharing were not articulated in terms meaningful to the people holding the purse strings, and the benefits of networking and resource sharing were disputed in many quarters.

The bibliographic utilities were established as the direct result of computerized library operations, but in the mid-1970s, the three major utilities in the United States as we know them today were still in formative or transitional periods. (The utilities provide computer-based services organized by and for libraries whereby members contribute to and modify the resource data bases as needed to provide various library and information services.) Online Computer Library Center, Inc., or OCLC, was still called the Ohio College Library Center although its members were already spread throughout the United States. The Research Libraries Group (RLG) consisted of the New York Public Library and the libraries of Columbia, Harvard, and Yale Universities and did not have its own network computer facilities. The entity that became RLG's Research Libraries Information Network was under the control of Stanford University (which was not an RLG member at the time) as BALLOTS or Bibliographic Automation of Large Library Operations Using a Time-Sharing System. BALLOTS, however, was accessible to other libraries for shared cataloging and searching functions. And the Western Library Network (formerly the Washington Library Network) had not yet begun full implementation of its online system.

Similarly, the other network organizations, most of whom acted as a middle man by procuring services from the bibliographic utilities and other organizations for their members, were in a transitional period. Several of them did not survive. The organizations described in Library Networks, 1976-77 are listed below to refresh the reader's memory of the entities playing a major role at the time.1/

AMIGOS Bibliographic Council
Bibliographic Automation of Large Library Operations Using a Time-Sharing System (BALLOTS), Stanford University

California Library Authority for Systems and Services (CLASS)
Computer Aided Processing and Terminal Access Information Network (CAPTAIN), Rutgers University
Cooperative College Library Center (CCLC), Atlanta
Federal Library Committee Experiment in Cooperative Cataloging (FLECC)
Five Associated University Libraries (FAUL), New York State
Indiana Cooperative Library Services Authority (INCOLSA)
Midwest Region Library Network (MIDLNET)
New England Library Information Network (NELINET)
Northeast Academic Science Information Center (NASIC), New England Board of Higher Education
Ohio College Library Center (OCLC)
Pennsylvania Area Library Network (PALINET)
Pittsburgh Regional Library Center (PRLC)
Research Libraries Group (RLG)
Southeastern Library Network (SOLINET)
State University of New York (SUNY)
University of Toronto Library Automation Systems (UTLAS)
Washington Library Network (WLN)
Western Interstate Library Coordinating Organization (WILCO)

Although the Council for Computerized Library Networks (CCLN) had been established in 1973 as an "umbrella" organization for many of these network organizations and had attempted to address the concerns and problems facing these groups, a vacuum existed in the area of nationwide network planning. And by the late 1970s, CCLN itself became inactive and dropped out of the networking scene.

Changes had also occurred in the library automation and resource sharing activities of individual libraries by the mid-1970s. Research and development efforts in library automation had shifted from decentralized to centralized development in a few large organizations. Although minicomputer-based local systems developed by individual libraries or commercial vendors had started to appear, the use of local systems, as opposed to the large computer systems of the bibliographic utilities or the product generation systems of the commercial vendors, was not widespread. Hardware was still relatively expensive, and the capabilities of the local systems were rather limited. On the other hand, with an increasing number of libraries that had access to machine-readable records from different sources, resource sharing tools like COM (computer-output-microform) catalogs became widely available on a statewide, regional, or local basis.

Also by the mid-1970s, the pioneering efforts of the Library of Congress that had been funded by the Council on Library Resources and resulted in the LC MARC Distribution Service had been incorporated into plans for a nationwide library and information network. In 1975, the National Commission on Libraries and Information Science (NCLIS) recommended in its report, Toward a National Program for Library and Information Services: Goals for Action, that a nationwide network of library and information services be planned, developed, and implemented "to tie together information systems at all levels: Federal, multistate, individual state, and local, as well as compatible systems found in the private sector."2/ The NCLIS program document assigned specific responsibilities to the organizations at all of these levels, including the Library

of Congress for whom the following statement was made: "The participation of the Library of Congress is crucial to the development of a National Program and to the operation of the nationwide network because it has the capacity and the materials to perform many common services in both the areas of technical processing and reference and because it can set the national bibliographic standards for the program."3/

To provide further detail on its responsibilities, the Library of Congress commissioned a study in 1975, which was funded by NCLIS, and issued the report The Role of the Library of Congress in the Evolving National Network. The study attempted to identify in what areas and how the Library could support the activities of the network organizations and libraries that were potential participants in the nationwide network. One of the principal findings of the study was that the "Library of Congress should assume leadership of network development activities by performing the major coordinating role in applying technology and acquiring funding for the technical and standards-related tasks required to link Federal, multistate, state, and local systems into the national network."4/ The report also contained two recommendations that influenced later developments: "Meetings should be held with appropriate individuals to develop the specifications for the telecommunications and computer architecture of the distributed computer processing system required by the national network . . . and with appropriate individuals to determine the organizational structure of the national network so that the levels and the access routes by which individual libraries are served by the network can be defined."5/

In early 1976, the Library of Congress established an Office of the Special Assistant for Network Development (later named the Network Development Office and recently renamed the Network Development and MARC Standards Office), headed by Henriette D. Avram, to allow the Library to participate more actively in nationwide network planning. In April of that year, the Library of Congress sponsored the first meeting of the group that became known as the Network Advisory Committee.

In the nearly ten years that have passed, several of the organizations and many of the individuals associated with networking have changed. Although substantial progress has been made in solving the problems that faced us in 1975, different aspects of the same problems have emerged in 1985, and new developments in the computer and telecommunications technologies are being introduced at an unprecedented rate. The funding situation for library and information services is precarious and uneven, with some institutions or organizations having minimal problems in obtaining additional funding while others are struggling to keep their existing services.

The Network Advisory Committee has successfully met the challenge of nationwide network planning amid the shifting needs of the library and information service community, although not quite in the way envisioned by its sponsors and supporters in 1975. The following chapters contain the highlights of the activities of the Network Advisory Committee to pull together reports that have appeared in different sources and, to the extent possible, to relate these activities to other significant contemporaneous events. A "Chronology" is included as Appendix A of this document; a "Selective Bibliography" of items published by or for the Network Advisory Committee as Appendix B; and a list of "Network Advisory Committee Members" as Appendix C.

NOTES

1/ Susan K. Martin, Library Networks, 1976-77 (White Plains, N.Y.: Knowledge Industry Publications, 1976), 131 p.

2/ National Commission on Libraries and Information Science, Toward a National Program for Library and Information Services: Goals for Action (Washington, D.C.: 1975), pp. 48-49.

3/ Ibid., p. 67.

4/ Lawrence F. Buckland and William L. Basinski, The Role of the Library of Congress in the Evolving National Network (Washington, D.C.: Library of Congress, 1978), p. 4.

5/ Ibid., p. 5.

2. THE FIRST YEAR

On April 12, 1976, senior representatives from several of the major network organizations attended a meeting at the Library of Congress at the invitation of the Deputy Librarian of Congress, William J. Welsh. Different networking issues were discussed, and the participants agreed that such a gathering was a useful vehicle for the exchange of ideas related to networking and should be continued. For the next meeting, they requested that the Library's Network Development Office staff prepare a working paper incorporating the major points discussed earlier to provide a focus for the group's deliberations. Funding for this meeting and all but one of the subsequent ones was provided by the Council on Library Resources.

At the second meeting on August 9, 1976, Mr. Welsh asked that the attendees, as representatives of their organizations, act in an advisory capacity to the Network Development Office as the Network Advisory Group. Having received a name, the group began its review of the working paper prepared by the LC staff and, with the assistance of several ad hoc committees, started the refinement process that continued through the following two meetings. By the time the third meeting was held on December 3-4, 1976, the paper, which was viewed as an initial blueprint for nationwide library network planning, contained sufficient detail for special tasks to be started. These tasks concentrated on a subset of the total network, namely, the library bibliographic component, whose purposes were to facilitate the sharing of bibliographic resources and reduce the rate of increase of per-unit costs for bibliographic services. This component constituted that part of the network encompassing a bibliographic service system and portions of a communications system but excluded for the time being a resource system to deliver needed items to a user.

The advisory group recommended that: (1) a task force of technical experts from the network organizations with operating automated systems be established to undertake the initial design work of the network architecture; (2) the Library of Congress conduct a study to determine the hardware configuration and resources required to operate a network bibliographic service; and (3) a subcommittee of the advisory group be assigned the task of investigating future network organization and management. The Library also announced that steps were being taken to establish the advisory group as an official Library of Congress committee.

The fourth and last meeting of the "original" Network Advisory Group took place on April 11-12, 1977, a year after that first informal gathering of network representatives. Shortly after this meeting, the Librarian of Congress, Daniel J. Boorstin, established a Network Advisory Committee to advise the Library on matters related to nationwide network planning.

A limited distribution of the working paper had been made to members of the advisory group and their constituencies before the April 1977 meeting, but only a few comments had been received at this point. To give the paper greater prominence, the advisory group decided to hold a briefing at the annual conference of the American Library Association that June. It also recommended that the comments received be incorporated into a revised version to be made available for the briefing. Thus, the paper Toward a National Library and

Information Service Network: The Library Bibliographic Component was introduced to the library profession.

Even with such short notice, the briefing attracted a standing-room-only crowd. A panel composed of Network Advisory Group members discussed the different sections of the paper and attempted to convey to the audience an appreciation of the complex issues involved. (Although the Network Advisory Committee had been established by this time, the speakers had been selected on the basis of their participation in the work of the Network Advisory Group.) The advisory group had successfully cleared the first hurdle and was ready for the next one.

3. THE SECOND PHASE

The newly constituted Network Advisory Committee met for the first time on November 28-29, 1977. Although the core of members of the Network Advisory Group remained the same under the new organization, some new members were added at this point. (The membership of the advisory group and the advisory committee is listed in Appendix C.)

Several things were set in motion, resulting in a completely different emphasis for the committee by the end of 1979. At the November 1977 meeting, the advisory committee approved a motion to create a steering committee to establish the agenda for the advisory committee's meetings and articulate the issues to be brought before the full committee. Before these tasks could be accomplished, the steering committee attempted to resolve some fundamental issues such as the credentials, goals, and objectives of the Network Advisory Committee.

Concurrently, the Council on Library Resources was in the process of preparing a five-year development plan for a comprehensive, computerized bibliographic system for review by several foundations that had an interest in library services. The Council, whose representatives had been active participants in the work of the Network Advisory Committee, derived many of the key elements for the proposed program from the advisory committee's planning paper and the work performed by the Library of Congress Network Development Office. The Council received funding for its plan, and its Bibliographic Service Development Program (BSDP) was officially established in November 1978.

Discussions at the Network Advisory Committee's meetings during 1978 and 1979 indicated considerable confusion vis-a-vis the relationship of the committee and its activities to the BSDP. These issues were eventually resolved, as described below.

Other activities were also in progress. Following the advisory committee's recommendation, a task force of technical experts (which became known as the Network Technical Architecture Group or NTAG) from the network organizations with operating automated systems was established to design the network architecture. The group met several times during 1977 and 1978 and produced a general requirements document entitled Message Delivery System for the National Library and Information Network, which was reviewed and approved by the Network Advisory Committee at its May 1978 meeting. The advisory committee instructed NTAG to proceed with the specifications for detailed requirements of the message delivery system. NTAG prepared a request for proposal to obtain these detailed requirements with contractual support, and the proposal was submitted to the Council on Library Resources for possible funding. This project was eventually subsumed by activities conducted by the Council's Bibliographic Service Development Program, which used the general requirements document mentioned above as a starting point.

By 1980, the message delivery system had evolved into the Linked Systems Project whereby the computer systems of the participants, the Library of Congress, the Research Libraries Information Network (RLIN), the Western

Library Network (WLN), and OCLC (which joined the group in 1984), would be able to exchange data through computer-to-computer communications links. (A recent article in American Libraries and a forthcoming paper in Library Resources & Technical Services describe the project in greater detail.1/) The project will allow, for example, a user at a WLN terminal to search RLIN's authority files using WLN's search procedures and to add a record to the WLN's files through online distribution. The first application for the link will be the online distribution of name authority data, scheduled for full operation in the fall of 1985. At this point, OCLC's commitment includes only the exchange of authority records. The Linked Systems Project has been funded in large part by the Council on Library Resources as part of its Bibliographic Service Development Program.

The Linked Systems Project also represents the culmination of another significant parallel effort: the development of communications protocols for library and information service activities. In the mid-1970s, the Telecommunications Committee of the American Library Association's Library and Information Technology Association (then known as the Information Science and Information Division) produced the framework for a computer-to-computer communications protocol. This work was continued by a joint task force of the National Commission on Libraries and Information Science and the National Bureau of Standards, which developed a computer network protocol for library and information science applications based on existing protocols or ones being developed by national and international standards organizations. The task force's report was published in late 1977 as A Computer Network Protocol for Library and Information Science Applications 2/and formed the basis for the Network Technical Architecture Group's initial work on the message delivery system. Although the protocols proposed by the NCLIS/NBS task force have been largely superseded by the International Organization for Standardization's Open Systems Interconnection, they represented an important contribution to the standards process. At present, many of the individuals and organizations in the Linked Systems Project are continuing this work to develop protocols for library and information service activities under the aegis of the National Information Standards Organization (Z39).

Another task identified during the initial stages of the advisory committee's deliberations was to investigate network organization and management. A subcommittee had been established to work on this issue; its report, in the form of a work statement, was submitted to the advisory committee at its meeting in May 1978. The advisory committee, in turn, recommended that the latest version of the work statement be turned over to the Council on Library Resources for consideration for funding. Governance of library networks became an issue of great interest to the Council and in 1980, provided the focus for extensive discussions (described in the next chapter) by the Network Advisory Committee and the library and information service community.

Dissemination of the advisory committee's paper Toward a National Library and Information Service Network: The Library Bibliographic Component triggered many responses from the profession. In terms of the work of the advisory committee, the response from the Association of American Publishers was important in that it recommended investigating the potential role of the nonlibrary sector in the proposed network. Two meetings were held in 1978 and

1979 with individuals representing the organizations in this sector, resulting in a formal proposal to establish a subcommittee to bring together the different parts of the nonlibrary component and involve them more actively in the planning and development of the network. The subcommittee presented a plan for action to the advisory committee, but since this presentation occurred at a point when the advisory committee itself was in a transition stage, the plan was not acted upon. The advisory committee, however, did recommend that the four principal organizations involved in this effort, the American Society for Information Science, the Association of American Publishers, the Information Industry Association, and the National Federation of Abstracting and Information Services, be given member status in the Network Advisory Committee.

Also during this period, other groups such as the Council for Computerized Library Networks (CCLN), the Chief Officers of State Library Agencies (COSLA), the Association of Research Libraries, and the Medical Library Association attempted to define their roles in the library bibliographic component, a task noted in the advisory committee's planning paper. CCLN and COSLA began separate papers on the role of state and multistate networks that advocated conflicting positions, namely a direct flow of Federal funds to network organizations versus funneling all Federal funds through state library agencies, but later resolved these conflicts and presented a single report to the advisory committee. Since then, the issue of the role of state and multistate networks has surfaced in different guises, e.g., the emerging statewide computerized bibliographic networks and their impact on other network organizations (see the discussion in the following chapter) and continues to be a topic of interest and concern to the Network Advisory Committee.

The September 25, 1979 meeting was a watershed in that it resulted in a new statement of objectives, including a key provision that the Network Advisory Committee should serve as a focal point for the identification of issues and formulation of recommendations with regard to nationwide network planning and policy. The other objectives were to advise the Librarian of Congress on the role of the Library in a nationwide network, provide information related to networking to the Council on Library Resources' Bibliographic Service Development Program, provide a forum for the several segments of the library and information community to contribute to the development of network specifications, serve as a coordinating body for networking activities, keep informed through status reports provided by operating entities in networking, and publicize networking activities to interested persons.

The advisory committee compiled a list of topics for discussion and picked one as a prototype for the new mode of operation. A planning subcommittee was then appointed to work out the details for the program. Thus, the second and most difficult phase of the Network Advisory Committee's existence came to a conclusion. Aside from the problems in determining how it would operate, the advisory committee had to overcome the doubts of the profession. Unintentionally, the connotations of "national network" versus "nationwide network" caused a problem, "national" implying a centralized, Federally-owned and operated entity that would dictate the course of network development. The role of the Library of Congress and its Network Development Office (NDO) was also viewed with suspicion although official statements were made to allay these fears: "NDO, acting as an interim network coordinating agency as recommended in the NAC paper, serves as a secretariat to NAC and,

in addition, reports to NAC on progress made on projects under its direction. NDO considers its role as one of coordination and cooperation with network-related agencies and therefore its activities are complementary to NAC and NTAG efforts."3/

A cursory review of the literature of that period indicates that some members of the profession, when faced with the possibility that the concept of an integrated nationwide network for library and information services might become a reality, expressed doubts that such an entity was needed or concerns as to how the development was taking place. For example, the summaries appearing in the professional journals on the Institute on the National Network sponsored by ALA's Information Science and Automation Division (the predecessor of the Library and Information Technology Association) and held on February 24-25, 1977, reflect some of these views. In his keynote address, Joseph Rosenthal (University of California, Berkeley), "citing the numerous organizations, public and private, which would be involved in a national network, . . . said 'a . . . rigid, encompassing, and stable bibliographic network is unlikely . . . the conceptual balloon of a monolithic national bibliographic network is not difficult to deflate . . . the developing cooperative library and information systems (can be compared to) a multidimensional chess game in which all the pieces have varying capabilities . . . all of which will evolve at varying rates of speed.' "4/

Many of these developments would have taken place regardless of whether the Network Advisory Committee existed or whether it had issued its planning paper, but by 1980, the advisory committee had the capability to delve into the background of these concerns and to separate the imagined problems from the real ones. The next section describes these efforts.

NOTES

1/ Ray Denenberg and Sally H. McCallum, "RLG/WLN/LC Computers Ready to 'Talk'," American Libraries 15 (June 1984): 400-404. Henriette D. Avram, "The Linked Systems Project: Its Implications for Resource Sharing," Library Resources & Technical Services (In press).

2/ NCLIS/NBS Task Force on Computer Network Protocol, A Computer Network Protocol for Library and Information Science Applications (Washington, D.C.: National Commission on Libraries and Information Science, 1977) 90 p.

3/ Henriette D. Avram, "Toward a Nationwide Library Network," Journal of Library Automation 11 (December 1978), p. 290.

4/ "ALA/ISAD Institute on the National Network," Library Journal 102 (April 1, 1977), p. 761.

4. THE THIRD PHASE

The "new" organizational structure of the Network Advisory Committee consisted of a format where each meeting would be devoted to a topic of interest and concern to the members and the organizations or constituents they represent. A program subcommittee would be appointed to plan each session and to follow through to act on the recommendations, compile the reports when appropriate, or keep the membership informed of new developments. In general, the program sessions would begin with speakers, many of whom were commissioned to write papers on different aspects of the topic, and then proceed with discussions with the group as a committee of the whole, small group discussions, and back to the full committee. In addition, a short business meeting would be scheduled with each session for status reports on issues discussed at previous meetings, information reports on the activities of organizations like the Library of Congress, the Council on Library Resources, or the National Commission on Libraries and Information Science, or for planning for future meetings. The advisory committee has held an average of two program meetings a year.

Topics for the early program sessions were taken from a list compiled by the Network Advisory Committee at its September 1979 meeting. These topics are listed below in alphabetical order to indicate the issues that concerned the advisory committee at that time:

- Definition and development of methods for coordinating or integrating personal and corporate author authority file systems among individual libraries, bibliographic utilities, and abstracting and indexing services.
- Development of a national serials data base.
- Development of a telecommunications system for nationwide bibliographic networking.
- Discussion of the international role of a U.S. nationwide network.
- Discussion of the Network Advisory Committee members' responses to the Nationwide Data Base Design and other documents proposed by the Library of Congress and by other groups represented on the advisory committee.
- Extent to which the LC MARC formats are given a multi-institutional approach.
- Funding for research and development in networking.
- Governance of the proposed nationwide network.
- Identification and description of methods for bridging the gap, particularly through subject approaches, between library bibliographic files of monograph and serial holdings and indexes to conference papers, technical reports, and other documents covered by abstracting and indexing services, to provide a user with a single access mechanism.

- Identification of pilot demonstrations to test networking concepts.
- Identification of the roles of the various segments of the library/information community, development of functional specifications for a nationwide network, and the integration of these roles into a master plan for a nationwide network.
- Impact of AACR2 on a networking environment.
- Location reporting/document delivery/resource component.
- Network communication of nonbibliographic data.
- Nonlibrary sector in networking.
- Ownership of bibliographic information and related copyright matters.
- Role of home information systems in the proposed network.
- Role of the total nationwide network (instead of the role of the individual components).
- Standards-making process: how standards are compiled, who is working on them, what standards are being worked on, what standards are needed, etc.
- Study of the relationship among a nationwide network, the Bibliographic Service Development Program, and the National Periodicals System (including the proposed National Periodicals Center).
- Testing linkages with data bases other than the normal bibliographic ones, e.g., data bases of MARC data elements, documentation, etc.

In 1981, a membership subcommittee was appointed to compile criteria for membership on the Network Advisory Committee and review applications for membership received from different organizations. The full text of the criteria is included as Appendix D, but certain portions are quoted here to show what is expected of member organizations: "Associations or organizations formally constituted and functioning in the public and private (for-profit or not-for-profit) sector engaged in library and information service networking or network development, or having an impact on the development of a nationwide library and information service network and can make a unique contribution to NAC, are eligible for membership. . . . Associations or organizations applying for membership are required to submit their request in writing to the NAC chair indicating their interest and justification for membership. They must show the impact of their activities and programs on the developing nationwide library and information service network and the unique contribution they can make to NAC."

Two other standing subcommittees have been formed in recent months: a statistics subcommittee to identify areas in which data related to networking activities will be needed and a communications subcommittee to explore more effective ways to disseminate the results of the advisory committee's deliberations. In addition, the advisory committee's objectives were modified in

1982 to include a statement that it will serve as a sounding board and a forum for the National Commission on Libraries and Information Science on matters of interest to NCLIS.

The remainder of this section consists of the highlights of the advisory committee's program sessions and is arranged in rough chronological order. The discussions of several meetings, however, are grouped together because they represent different aspects of a topic although the meetings themselves did not take place sequentially. Reports for several of these meetings have appeared in the Library of Congress Information Bulletin or have been issued as separate documents and are cited in the bibliography in Appendix B; therefore, these accounts are very brief and attempt only to convey to the readers of this document the complexities and breadth of the issues considered.

OWNERSHIP AND DISTRIBUTION OF BIBLIOGRAPHIC DATA

In its first program session on March 4-5, 1980, the Network Advisory Committee tackled the topic of ownership and distribution of bibliographic data. This issue was of great concern to the membership because the unprecedented growth of machine-readable bibliographic files and the uses and services derived from them had created relationships for which precedents and ground rules did not exist.

When reflecting on the events that have taken place long after this meeting, two statements made in the course of the committee's deliberations are particularly significant:

> "Possession of bibliographic records may not constitute ownership in a legal sense. Access to such records, therefore, may require a new concept of access or control other than ownership to replace or supplement the traditional practice of copyright. For bibliographic records, ownership may be better established by the possession of and the ability to provide access to records. Such access could be governed by contractual arrangements.
>
> "Providing fair compensation or other recognition to the creators, modifiers, and holders of bibliographic records is a desirable and necessary goal. The achievement of this goal requires, in turn, that a balance be effected among the goals of unimpeded access to bibliographic information, the economic viability of the creators, modifiers, and holders of bibliographic information, and the social good."1/

The advisory committee concluded that access to bibliographic information must be granted in a way that preserves the economic incentive of those providing the records while at the same time preserving the tradition of wide dissemination of bibliographic information. It also recommended that a six-month project be undertaken with contractual support to identify the current and potential creators, modifiers, and possessors of machine-readable bibliographic information and to get their endorsement of the meeting; to determine their current plans for shared access to bibliographic data; and to determine their

requirements for fair compensation or other recognition for their data so that mechanisms for shared access to bibliographic information could be established.

Highlights of this meeting were issued as a working document, Ownership and Distribution of Bibliographic Data, and made widely available to elicit comments from the library and information service community. The advisory committee sponsored two open meetings held in conjunction with conferences of the American Library Association. The first one took place shortly after the working document was distributed, so only a few comments were received. The second open meeting held on June 28, 1981 did produce sufficient guidance for the Network Advisory Committee on this issue. (For the details of this meeting, see the report in the Library of Congress Information Bulletin.2/) One of the speakers noted that in the minds of many members of the profession, the immediacy of the problem had been defused when the OCLC Board of Trustees issued its third-party guidelines in February 1980, essentially removing restrictions on third-party use of bibliographic records from OCLC files except when dealing with for-profit organizations. At its September 15-17, 1981 meeting, the Network Advisory Committee decided to drop this topic from its agenda since the library and information service community had not indicated a strong desire to have this issue pursued further.3/

Ironically in late 1982, OCLC announced that it would seek legal protection by registering its data base for copyright "to assure that OCLC members' rights to use of the database are protected and that unauthorized use does not increase the cost or decrease system performance for authorized users."4/ After over two years of negotiations between OCLC and the regional network organizations on contract language, it appears that contractual protection rather than copyright, except in the case of third-party infringers, will prevail, but no official announcement has been made as of this writing. In the summer of 1985, the Library of Congress began claiming copyright for records originating at the Library on the MARC tapes distributed outside the United States. The issue of ownership and distribution of bibliographic data has also surfaced as implementation of the Linked Systems Project gets closer and as more institutions acquire local systems that allow them to download data from large computer systems or to link local systems.

NATIONWIDE NETWORK GOVERNANCE

By the time the Network Advisory Committe held its program session on governance for a nationwide network on October 1-2, 1980, the National Commission on Libraries and Information Science and the University of Pittsburgh had co-sponsored a major conference on the structure and governance of library networks in 1978 in anticipation of the first White House Conference on Library and Information Services in 1979. OCLC had also effected a major restructuring of its administration and governance during this period. Discussing nationwide network governance at this point, therefore, was timely in that the library and information service community already had a good deal of background information on this topic.

Thomas Galvin, dean of the Graduate School of Library and Information Science, University of Pittsburgh, provided the keynote address for this session. He mentioned several trends or impediments facing network planners, such as:

(1) overcoming the growing skepticism about the need, desirability, or value of a nationwide network; (2) going beyond the abstract when discussing governance so that the profession can make meaningful evaluations of any proposed structure; (3) minimizing the problems related to local institutional autonomy by enumerating the areas requiring changes at a local level, areas where system requirements may necessitate changes, areas that might potentially be affected, and areas that would not be affected at all; and (4) identifying established centers of power, authority, and status in the library and information service communities so that a proposed governance structure does not present a gratuitous threat to established authority and the people and organizations associated with it.

Following discussions of several different models that could be used for a proposed governance structure, the Network Advisory Committee formed smaller working groups, which in turn developed three scenarios for consideration: legislative (a structure resulting from prescriptive legislative action); evolutionary (a process in which specific ad hoc legal and/or other types of agreements would provide the necessary definitions); and private sector (a structure in which for-profit and not-for-profit organizations would create a nationwide network within the context of the restrictions and opportunities of the marketplace). The advisory committee decided to synthesize these scenarios in a working document, A Nationwide Network: Development, Governance, Support, which would be distributed widely, and to discuss this issue at open meetings held in conjunction with the conferences of the American Library Association.

The open meeting on June 28, 1981, the details of which were reported in the Library of Congress Information Bulletin 5/, provided evidence that the library and information service community favored the evolutionary scenario, which in fact, was the process that was taking place. As one of the speakers (Barbara Markuson of the Indiana Cooperative Library Services Authority) noted: ". . . one should probably avoid words like 'governance' or 'networks' because they will always be controversial. Instead one should talk about 'money,' 'planning,' or 'development,' particularly within a framework for improvement of library services. There might be far more agreement and consensus with such an approach."6/ At its business meeting on September 15, 1981, the Network Advisory Committee decided to drop this topic from its agenda since the library and information service community had not indicated a strong desire to pursue this issue further.

RESOURCE SHARING

Over a period of four years, the Network Advisory Committee devoted four program meetings to different aspects of resource sharing. In this context, "resource sharing" refers not only to the process of sharing materials but also to the sharing of other "resources," such as bibliographic records or location data. These meetings have been described together because they represented a continuum in the activities of the advisory committee.

Resource Sharing

The Network Advisory Committee held the first of what turned into a series of meetings on resource sharing on September 15-17, 1981. Speakers representing three different organizations gave presentations on the technology that might be used in future resource sharing activities and on an organization whose sole purpose is resource sharing. Representatives from Satellite Business Systems provided an overview of the satellite technology and the applications in place and potential services that might be offered, such as voice and data communications, facsimile transmission, electronic mail, or teleconferencing. David Remington, then chief of the Library of Congress Cataloging Distribution Service, described the document storage, preservation, retrieval, display printing, CRT display, and distribution systems that were being developed at the Library with laser scanning devices and optical digital disks for storage. Although these systems were being used to produce catalog cards, there was a wide range of possibilities for future applications, such as for publishing or preservation. (The Library of Congress did, in fact, move into these areas when it established its Optical Disk Pilot Program a year later.) Donald Simpson, executive director of the Center for Research Libraries, described the activities and plans of the center, which was founded in 1949 for storing infrequently used but valuable research materials and for performing cooperative centralized acquisitions and cataloging. He also mentioned the difficulties of operating certain centralized services in an environment where most library and information services are decentralized.

In addition, the Network Advisory Committee had commissioned a paper, A New Look at Interlibrary Loan, prepared by Richard Boss, senior consultant at Information Systems Consultants, Inc. During the program session, Mr. Boss provided an overview of interlibrary lending, discussed alternative strategies to improve interlibrary loan at the national level, and posed a series of questions for consideration by advisory committee members in the small working groups:

- Does the advisory committee accept (or reject) the premise that there is either no compelling evidence of a current need to create a nationwide location data base **or** that this is not the right time to pursue such an objective?

- If no new nationwide location data base is to be developed, should the Register of Additional Locations be expanded as a low-cost tool for libraries that do not have online searching capability as a back-up tool for other libraries?

- Should a program of coordinating the existing location mechanisms be undertaken with particular emphasis on linking the bibliographic utilities and on improving the capacity of the bibliographic utilities to provide information about serials holdings?

- Should the design criteria suggested in the discussion of the questions in section III of the paper be accepted?

- Should the advisory committee encourage investigation of rapid telefacsimile and videodisk technologies by appropriate library groups?

The Network Advisory Committee reached consensus on two points: (1) At the national level, the problem of serial holdings and locations was the most troublesome; and (2) the problem of the transfer of materials from one location to another should be given a high priority for future work. For the first point, the advisory committee contacted different groups working on problems, such as developing a single access mechanism for users, designing a standard for detailed holdings statements and the corresponding specifications in the MARC formats, or developing telecommunications protocols and other interface efforts between systems, to inform them of the advisory committee's interest and concern. On the second point, the advisory committee agreed to devote its next meeting to the topic of the transfer of materials or document delivery.

Document Delivery

The program session on March 9-11, 1982, was an outgrowth of the previous meeting on the broader topic of resource sharing. The Network Advisory Committee had a briefing on ADONIS (Article Delivery Over Network Information Service), a project to develop a system using optical disks to store digitized text for articles in about 1,500 scientific, technical, and medical journals. Upon demand from the user, the article, including text and illustrations, could be transmitted directly to a user for printing or sent by mail in hard copy form. Charges for the service would include fees for royalty payments. ADONIS was being developed by a consortium of international publishers: Acadata (a subsidiary of Academic Press), Blackwell Scientific Publications, Elsevier Science Publishers, Pergamon Press, Springer Verlag, and John Wiley & Sons. (By early 1983, three members of the consortium had dropped out of the project, and the remaining ones were reconsidering their plans. It appears that since nothing more has been heard about ADONIS since 1983, the project, at least in the United States, may have been shelved.)

For this meeting, the Network Advisory Committee commissioned three papers to set the framework for the discussions to follow. The first paper by James L. Wood of Chemical Abstracts Service, Document Delivery: The Current Status and the Near-Term Future, described the dimensions of the document delivery activity in the United States, the component parts of the overall document delivery process in terms of their current status and trends, and the trends in the near-term (one to five years away). In the second paper, Document Delivery Technology: A Brief State of the Art Review, Mary Ellen Jacob of OCLC discussed the technologies affecting document delivery in terms of input, storage, communications, and output. And in the last paper, Libraries in the Year 2000, Susan H. Crooks of Arthur D. Little, Inc., set the stage for what the future holds for libraries by creating several scenarios of what library and information services would be like in the year 2000. (These papers were collected and published as Document Delivery—Background Papers Commissioned by the Network Advisory Committee.7/)

Several themes emerged from the small group discussions that followed:

- To determine where we are and how to evaluate where we want to go, the following items are needed: (1) a model and/or assessment technique should be developed; (2) more current data on document delivery should be collected; (3) an inventory of appropriate technologies and services

should be compiled; and (4) an assessment of the different technological options should be performed.

- Standards, in their broadest sense, are needed in areas related to linking computer systems, particularly at local levels, performance norms for document delivery services, common access methods to approach different data bases, and standardized bibliographic citations.

- The problems of public policy vs. for-profit services in the area of document delivery need to be addressed.

Prior to the next meeting on June 21-23, 1982, planning subcommittees worked on different aspects of the themes mentioned above, resulting in a draft work statement, "A Nationwide Study of Present Interlibrary Loan and Other Document Delivery Activities," and an action plan. The program portion of the June 1982 meeting consisted of presentations on the document delivery services offered by the Institute for Scientific Information, Dialog Information Retrieval Services, and Information/Documentation (INFO/DOC). The discussions concentrated on the draft work statement, resulting in revisions to the document to emphasize the broader concept of document delivery rather than the narrower one of interlibrary loan and to divide the study into two phases: first, to identify what studies have already been done and what data are already available; second, to determine what other data are needed. The final work statement for an advisory committee study was forwarded to the Council on Library Resources in early 1983 for consideration for funding.

The Council did consider the study and decided to sponsor the project itself. In their report Document Delivery in the United States, the consultants obtained by the Council investigated the problem areas identified by the Network Advisory Committee but concluded that they "have serious reservations about the preparation of a draft survey for a major study of document delivery because there is no evidence that the library and document services communities at large are seriously concerned about the performance of the document delivery system. While the consultants have strong biases in favor of improving document delivery, they reluctantly conclude that the actual performance of the system has done an excellent job of convincing users to wait. . . . More research might provide more accurate data than that presented in this report, but the consultants are of the opinion that more data is not the key to the document delivery problem."8/

In accepting this recommendation, however, the Council on Library Resources decided to supplement the report with other studies, such as: (1) a survey of users to determine how needed information is located and obtained and learn more about the extent to which users rely on nonlibrary resources to fulfill their needs for information; (2) experimental demonstrations of technologies to test alternative delivery mechanisms; (3) small grants to libraries willing to experiment with alternative organizational structures to improve the interlibrary loan process; and (4) a paper on the trends and developments in the commercial document delivery sector.

Emerging Statewide Computerized Bibliographic Networks

For its program session on April 25-27, 1983, the Network Advisory Committee turned to another aspect of resource sharing. It attempted to analyze the emerging state computerized bibliographic agency that is developing its own data base or plans to consolidate a data base from which services and products will be developed for use within the state and to analyze the impact of these developments on library and information services. To gain a better understanding of what was happening in the states, the advisory committee commissioned a background paper, State and Commercial Bibliographic Activities and Their Effect on the Bibliographic Utilities, from Information Systems Consultants, Inc. In addition, several speakers were invited to participate in this session: Vinad Chachra of Virginia Polytechnic Institute and State University (activities in West Virginia and Virginia); David McKay, North Carolina State Library (activities in North Carolina); Anne Marie Falsone, Colorado State Library (activities in Colorado); and three consultants (Richard Boss, Information Systems Consultants, Inc.; Donald King, King Research; and James Rush, James E. Rush Associates) to share their experiences and thoughts on these developments.

The advisory committee formed small working groups, which were asked to consider what would be a rational way of developing systems to meet the needs of individual states. The reports from these discussions indicated that the potential impact of statewide computerized bibliographic networks might be significant in the long-term but not in the next few years. There was also consensus that the role of the bibliographic utilities and the other network organizations will change in the future and that the trend toward decentralization will continue and probably accelerate.

The advisory committee recommended four general courses of action to: (1) promote and support continued efforts in the standards area, particularly for work related to standardizing the contents of records in local systems; (2) assist in the process of setting priorities with other appropriate groups to develop a more rational planning process for networking at all levels; (3) encourage the dissemination of information on the economics of networking in local systems; and (4) encourage state level planning activities to provide a framework within which local and regional systems can develop, link, and expand. Following this meeting, the background paper was forwarded to each state library agency for review, along with a short questionnaire included at the request of the Chief Officers of State Library Agencies to obtain data on how much Library Services and Construction Act Title I or Title II funds have been used to produce resource sharing tools or pay for network participation. At a subsequent business meeting, the advisory committee decided that since the paper was essentially a snapshot in time, i.e., March and August 1983, it should be left in its present status as a working document.

Electronic Information Delivery Systems

The program session on April 18-20, 1984 was devoted to several aspects of electronic information delivery systems to inform the membership and the rest of the library and information service community of the issues emanating from the changing environments in which they will find themselves as electronic

information delivery increases. The areas covered included: (1) electronic manuscript generation and transmission, (2) online full-text searching and retrieval, (3) online data base production and distribution, (4) non-traditional sources of electronic information, (5) trends in equipment and equipment applications related to electronic information delivery, and (6) the changing interaction between libraries and library users being brought about by these emerging electronic information delivery systems.

Several speakers presented papers and oral reports on these topics:

- Anne Mehringer, Aspen Systems Corporation, The Publishing Environment: The Electronic Manuscript Project (described efforts to develop standards for the processing of author-produced electronic manuscripts).

- Eleanor Y. Goodchild, University of Pennsylvania Biomedical Library, The Publishing Environment: Online Full Text—Biomedical (reported on work done at the Biomedical Library with online full-text medical journals).

- William H. Lindberg, West Publishing Company, The Publishing Environment: Online Full Text—Legal (described his firm's online full-text legal services).

- Ronald L. Wigington, Chemical Abstracts Service, The Abstracting and Indexing Environment: Current Trends/New Directions (reported on Chemical Abstracts Service's experiences in becoming a distributor as well as a producer of online data bases and in entering the computer software business by producing software for the U.S. Patent and Trademark Office).

- Frances G. Spigai, Database Services, Inc., From Acquisition to Access: New Roles for Libraries and Library Networks in the '80s (reported on the increasing number of electronic information sources).

- William R. Nugent, Library of Congress Automated Systems Office, New Equipment and Applications: New Technological Environments, 1984-1990 (described the technology both needed and available for the storage, retrieval, and display of electronically-delivered information).

- Brett Butler, Information, Investment & Intelligence, Inc. (Infour), Computer-Aided Database Searching (addressed computer-aided data base searching in the context of electronic information delivery systems and library/library-user interfaces).

These papers and the resulting discussion have been published as Electronic Information Delivery Systems; Proceedings of the Library of Congress Network Advisory Committee Meeting, April 18-20, 1984.9/ Following this meeting, a subcommittee prepared a draft proposal on "The Impact of Start-Up Expert Systems on Libraries," which is under review by the advisory committee and should be discussed further at a future business meeting.

PUBLIC/PRIVATE SECTOR INTERACTIONS

In recent years, the issue of public/private sector interactions has been the subject of much controversial and often acrimonious debate in the library and information service community. This issue was also brought up at several advisory committee program meetings, so the opportunity to discuss the underlying problems of public/private sector relationships in more depth was welcomed. At the request of the National Commission on Libraries and Information Science, the Network Advisory Committee undertook a discussion of this topic for its program session on October 25-27, 1982, using as a starting point the report, Public Sector/Private Sector Interaction in Providing Information Services, prepared by the NCLIS Public/Private Sector Task Force. Initial responses to this report had been mixed, some of it highly critical of the way certain issues were discussed or avoided. For its discussion, the advisory committee decided to focus its critique of the report on issues related or of importance to library networking.

The program began with a review and summary of the NCLIS report, with the chairman of the Public Sector/Private Sector Task Force, Dean Robert Hayes, Graduate School of Library and Information Science, University of California, Los Angeles, serving as a resource person to provide background material and clarification as well as to respond to questions from the advisory committee. In addition, the advisory committee commissioned a paper, A Discussion Paper . . . on the Public Sector/Private Sector Task Force Report, prepared by Glyn Evans, executive director of SUNY/OCLC, to identify deficiencies in the report and highlight the issues of major concern in the area of networking.

To facilitate the discussion in the small working groups, the attendees were asked to compare two sets of services that provided machine-readable bibliographic records and document delivery services, with one service in each set offered by an agency of the Federal government, the other by a for-profit organization. The working groups concluded that while equity of access and preservation were of concern, these services could, with appropriate safeguards, be supplied by either sector. In addition to specific responses to recommendations in the NCLIS report, the Network Advisory Committee recommended that NCLIS prepare an inventory of past and current projects that have demonstrated the effectiveness and efficiency of public and private sector interaction, identify what made those particular projects successful, and develop guidelines for promoting or funding similar projects in the future. In addition, the advisory committee recommended that NCLIS review its existing reports, in particular, the results of the White House Conference on Library and Information Services, to identify potential projects which would promote and encourage public/private sector interaction.

The report of this meeting has been published as Public/Private Sector Interactions: The Implications for Networking 10/ and officially transmitted to the National Commission on Libraries and Information Science. The concluding paragraph reflects the advisory committee's reactions (and in fact, its operating philosophy): "The Network Advisory Committee's primary concern is to provide a positive climate for discussion that will promote exchange between the public and the private sector for the benefit of the entire information profession. We should not focus on those issues which are divisive but rather concentrate on

those areas where we can, and have in the past, worked together and identify those areas in the future where mutual benefits can be achieved. This is no small task, particularly when economics underline much of the concerns between the two sectors and continue to provide divisive forces. Nonetheless, the advisory committee feels that the two groups will continue to co-exist and can work together. We need not stumble over the issue of economics but accept them, recognizing the limitations this may create and get on with the job we all have of providing access to information in a variety of ways that promote a free and open society."11/

TELECOMMUNICATIONS

At the time the program on telecommunications was being planned, the planning subcommittee thought the topic would be timely because new regulatory provisions were imminent and the divestiture of the Bell operating system would take place on January 1, 1984. By October 23-25, 1983, when the meeting actually took place, telecommunications became a topic not only of great interest but of immediate concern to the library and information service community. On October 3, 1983, American Telephone & Telegraph Company (AT&T) had filed tariffs with the Federal Communications Commission (FCC) that, for example, OCLC estimated might have meant an average 73% increase in telecommunications costs for its users. On the very day of the advisory committee's meeting, a bill in the U.S. House of Representatives (H.R. 4102) was being marked up in committee concerning FCC's proposed access charge plan.

For this session, the Network Advisory Committee commissioned two papers: Overview of Telecommunications Technology Developments and Their Impact on Library and Information Services (prepared by Ronald Diener, executive director, OHIONET), and Overview of the Development of Current Telecommunications Policy (prepared by Walter G. Bolter, communications consultant). In addition, a third paper on an overview of OCLC's telecommunications system, which had been prepared as an internal document for OCLC, was made available to attendees. Speakers representing several components of the telecommunications field provided presentations on the following topics:

- Ronald Diener, OHIONET (overview of telecommunications technology developments and their impact on library and information services).

- Walter G. Bolter, communications consultant (legislative developments related to telecommunications and an overview of recent developments affecting telecommunications policy).

- Kenneth Levy, deputy chief of operations, Common Carrier Bureau, Federal Communications Commission (major FCC activities related to telecommunications).

- Brian Lederer, then people's counsel of the District of Columbia (reactions of a "state" to FCC changes and Bell system divestiture).

- Betty Callaham, South Carolina State Library, and Larry Hamilton, South Carolina Division of Information Resource Management (plans for

one state to develop its own microwave-based telecommunications network).

- Joseph Ford, then executive director, CAPCON Library Network (results of an informal survey of telecommunications costs for libraries, library networks, and bibliographic utilities).

- Larry Learn, OCLC (reactions, plans, and concerns of one large provider of telecommunications services)

- Representatives from AT&T Communications, MCI Communications, and Tymnet (description of their respective firm's services and the directions they expect to take in the next few years)

Following discussions of the group as a committee of the whole, the Network Advisory Committee concluded that immediate action was needed to convey to the Federal Communications Commission that if increases in private line tariffs are necessary, they should be phased in over a period of several years to allow libraries and other agencies with fixed budgets to absorb the increases. For the long-term, the advisory committee felt that the industry must be made aware of the importance of telecommunications in the activities of all segments of the library and information service community and that the profession should develop alternative proposals to include with future legislation to meet its specific needs. For its plan of action, the advisory committee agreed to request its member organizations and constituents to write to the FCC immediately to ask for a delay in the increase of rates. The salient points justifying the delay would be provided by the Washington Office of the American Library Association. For the long-term, the committee agreed that it would be appropriate for it to play a role in planning for technological alternatives.

This session had, among other things, an immediate effect on a proposed coalition being organized by the ALA Washington Office and the Association of Research Libraries to monitor telecommunications developments affecting library and educational data transmission. Initial contacts had already been made to potential member organizations by the time this meeting was held, but the presentations and the discussion provided an impetus for many of the advisory committee organizations to join the coalition.

The meeting also triggered extensive grass roots lobbying. For the first time in its history, the Federal Communications Commission received close to 600 letters from libraries, library organizations, and others describing the effect of the proposed rate increases on their library and information services. An equal number of letters were sent to members of Congress and to AT&T, and several library and network organizations filed petitions in FCC proceedings. From this evidence, the FCC voiced concern about the uneven impact of the new tariff structure and mentioned libraries specifically as users of bridged multipoint networks that would be charged more heavily but which do not have competitive alternatives immediately available. FCC suggested a less abrupt shift and more moderate initial charges. The second tariff filed by AT&T, which took effect in April 1985, included an average rate increase of 17% for library telecommunications users, still roughly five times higher than the average increases for other private line users, but considerably lower than the initial proposals in October 1983. Although library telecommunications users constitute

a very small percentage of AT&T's customers, AT&T representatives met with library representatives several times after the Network Advisory Committee meeting, and in the final tariff revision filed with the FCC, spelled out the mitigating effects of its proposed revisions for library customers (and only for library customers).

INFORMATION ECONOMY

For its program session on November 14-16, 1984, the Network Advisory Committee focused on the information economy and its impact on libraries and library networks to provide a working definition of the information economy and an explanation as to how libraries fit into or are affected by it. Several speakers presented reports or papers on specific aspects:

- Ronald F. Miller, executive director, Cooperative Library Agency for Systems and Services, reported on an informal survey of advisory committee members to identify important trends in the information economy affecting libraries. He also summarized for the group the results of an invitational conference "Libraries and Information Economics of California: Policy Issues and Research Needed," held in March 1984 in Lake Arrowhead, California.

- Kenneth Leeson, special advisor for policy issues, U.S. Department of State, described the findings of two seminal studies (Fritz Machlup's Knowledge and Knowledge Production and Marc Porat and Michael R. Rubin's The Information Economy) and how they may affect the government's information policies in the future.

- Sherman Robinson, Department of Agricultural and Resource Economics, University of California, Berkeley, provided a paper, Analyzing the Information Economy: Tools and Techniques, and gave a tutorial on the Machlup and Porat studies and the limitations of these studies when attempting to apply the tools and techniques to library and information services.

- Brett Butler, Information, Investment & Intelligence, Inc. (Infour), summarized a study on the information industry prepared by the Information Industry Association in 1984, which identified, among other things, the worldwide revenues of the information industry in 1983 and the contributions of the U.S.-based companies to those figures.

- Michael Turillo, Peat, Marwick, Mitchell & Co., presented examples of strategic management and strategic planning techniques and how they can be applied to library and information services.

- Martin Cummings, a consultant with the Council on Library Resources and former director of the National Library of Medicine, reported on the latest meeting sponsored by the Council on the economics of research libraries.

The Network Advisory Committee, after considerable discussions of the group as a committee of the whole, concluded that several steps should be taken:

(1) It should take a more active interest in making use of quantitative measures of the information economy; (2) it should collect, supply, and maintain useful data that complement and supplement national statistics; (3) it should measure the impact of the information economy and the shifts as they occur; and (4) it should support quantitative research to understand how libraries are affected by the emergence of the information economy. As a result of this session, a standing statistics subcommittee was formed to identify areas in which data will be needed, such as to measure networks and define their work, isolate the percentage of library budgets that goes into networking, and track the flow of money. The proceedings of this meeting, including the papers mentioned above, have been published as The Information Economy in the U.S.: Its Effect on Libraries and Library Networks; Proceedings of . . . Network Advisory Committee Meeting, May 6-8, 1985.12/

DEVELOPMENTS IN NETWORKING SINCE THE 1960S

At its program session on May 6-8, 1985, the Network Advisory Committee attempted to identify key issues in the networking field to provide assistance to the National Commission on Libraries and Information Science in revising its 1975 program document, Toward a National Program for Library and Information Services: Goals for Action. As the first step in this process, the advisory committee reviewed developments in networking since the late 1960s. Several speakers provided presentations and papers on the following aspects:

- Barbara E. Markuson, executive director, Indiana Cooperative Library Services Authority, presented a historical view of networking in the library field in her paper and talk, Issues in National Library Network Development: An Overview. She identified some of the key events that have influenced and possibly changed networking efforts.

- Susan K. Martin, director of libraries, Johns Hopkins University, described in her paper and talk, Networks: Changing Roles, the major shifts affecting networks and library cooperation.

- Ronald F. Miller, executive director, Cooperative Library Agency for Systems and Services, provided in his paper and talk, The Impact of Technology on Library Networks and Related Organizations, an overview of the technology and its effect on different kinds of network organizations.

- Noel E. Hanf, of the law firm of Wiggin and Dana, in his paper and talk, Library Networks and the Law, noted that the information technology or network technology is confronted with many obsolete laws and that many of the problems facing us now have no precedents. The key to technological promise lies in cooperation and sharing and involves a process of constant redefinition of rights and responsibilities.

After extensive discussion in the small working group sessions, the Network Advisory Committee made the following recommendations: (1) The advisory committee should assist NCLIS to develop a strategy to update the NCLIS program document with a networking perspective, incorporating NCLIS programs and the plans for the proposed 1989 White House Conference on

Library and Information Services and implement this strategy; (2) it should identify a common vision for networking and develop a plan to realize it; accomplishing this plan will require an assessment of the impact of local systems on networking and an examination of networks in other fields for implications for library and information networks; (3) it should strongly urge the Secretary of Education and other appropriate Federal agencies to carry out their important responsibilities for statistics gathering and dissemination; (4) it should be the catalyst to convince the library and information community about the importance of networking; (5) it should review the studies from the Library of Congress Center for the Book to see whether a paper on the future of print materials is needed; and (6) it should urge Federal support for networking and library services. The proceedings of this meeting will be be published in the near future.

SPECIAL LIBRARIES IN NETWORKS AND COOPERATIVES

At the request of the National Commission on Libraries and Information Science, the Network Advisory Committee reviewed a draft of the report of the joint task force of NCLIS and the Special Libraries Association, The Role of the Special Library in Networks and Cooperatives. Although this review did not constitute a separate program, it is mentioned here as another example of the assistance provided by the advisory committee to NCLIS. A subcommittee was appointed to perform the review and recommend to the full committee the actions to be taken. At its business meeting on October 23, 1983, the advisory committee discussed the subcommittee's findings, made some revisions to the subcommittee's report, and requested that the report, as amended, be forwarded to NCLIS. The specific actions taken by the advisory committee on the NCLIS/SLA task force recommendations are listed below:

- **NCLIS/SLA Recommendation 1:** The SLA Networking Committee, working with selected SLA chapter presidents, should undertake a pilot study based on the task force's SLA survey data to determine precisely what needs local networks satisfy and what constituencies they serve. **NAC Action:** NAC should support this recommendation because it would be helpful to have this information to assess kinds and degrees of resource sharing. The advisory committee, the Chief Officers of State Library Agencies, and others should offer to assist SLA in designing the pilot study.

- **NCLIS/SLA Recommendation 2:** The SLA Networking Committee should continue the task force's initial survey efforts by conducting biennial updates of SLA participation in networks and cooperative programs. **NAC Action:** NAC should support this recommendation because the biennial updates would be helpful in identifying trends in special library participation in networks and cooperatives.

- **NCLIS/SLA Recommendation 3:** The twenty-nine SLA subject-oriented divisions should place increased emphasis on tracking and encouraging networking activities by all special libraries in their division's fields of interest. **NAC Action:** NAC should support this recommendation if NCLIS and SLA agree to the following modifications: If possible, information should be collected from all special libraries, not just those

employing SLA members; data on special libraries not participating in networking activities should be quantified but without identifying individual libraries; and SLA should coordinate the effort to solicit resources to address research and development issues.

- **NCLIS/SLA Recommendation 4:** Representatives from NCLIS, SLA, and the nation's networks should convene meetings of management officials from for-profit and not-for-profit organizations and government agencies to discuss ways to increase and liberalize regional and national resource and information sharing. **NAC Action:** NAC should remain neutral on this recommendation because it is too broad and lacks focus. The advisory committee should advise NCLIS not to become involved in this effort. Instead, the proposed meeting(s) should be conducted in the context of SLA divisions' local, regional, and subject level activities.

- **NCLIS/SLA Recommendation 5:** The SLA Professional Development staff should design and conduct a continuing education course to acquaint association members with the roles, duties, and responsibilities of network members, the services and resources available from networks, the contractual obligations a network and its members share, and the names, locations, costs, and membership requirements of selected hospitable networks and cooperatives throughout the country. **NAC Action:** NAC should support this recommendation and its members should assist SLA in this educational effort.

- **NCLIS/SLA Recommendation 6:** NCLIS and SLA should develop legislative incentives designed to stimulate network access and use by small special libraries, which, for lack of resources, are not permitted at present to participate in state, regional, or national cooperative programs. **NAC Action:** NAC should not endorse this recommendation as is but go on record as agreeing that there are great opportunities for all special libraries (large, medium, and small) to participate in regional, state, and national resource sharing programs and encouraging a whole range of actions, including legislative incentives where appropriate, to foster special library participation in all types of cooperative programs.

- **NCLIS/SLA Recommendation 7:** (a) SLA staff and legal counsel should be available to consult with any not-for-profit network or cooperative that needs assistance in obtaining clarification from the Internal Revenue Service concerning the appropriate percentage of for-profit member libraries in the network; (b) SLA and the American Association of Law Libraries should form a joint committee to collect, monitor, summarize, and publicize future legal rulings at the Federal or state levels that may impact special and law library participation in networks and cooperatives; this joint committee should serve as a repository for such information and report new developments or changes to the memberships of SLA and AALL and to NCLIS; and this joint committee should prepare an action plan to provide better national documentation of future IRS decisions; (c) SLA's Board of Directors should work closely with its membership to help reconcile legal or regulatory problems the members may encounter as they increase their participation in library networks and cooperatives and should communicate the results of its efforts to the membership and to NCLIS whenever the problem appears

to be either one that might affect other libraries or networks or one that requires legislative remedy; (d) SLA's Board of Directors should establish an association award for the local, state, regional, or national formal cooperative program that has been most hospitable to special libraries in all aspects of its activities; (e) representatives from SLA's Board of Directors, the association staff, and the Networking Committee should work with NCLIS and the ALA Washington Office to support adequate funding and precise language for all interlibrary cooperation legislation. **NAC Action:** NAC should reject 7(a) as not being practical, support 7(b) and 7(c), take no stand on 7(d), and support 7(e) if the Chief Officers of State Library Agencies is included with NCLIS and ALA since the major Federal interlibrary cooperation legislation (Title III of the Library Services and Construction Act) is administered by the states.

- **NCLIS/SLA Recommendation 8:** The SLA Networking Committee should monitor the pace, character, and extent of network decentralization and recommend to SLA and NCLIS actions needed either to support those developments that appear to be beneficial to national resource access or to ameliorate any adverse impacts of further decentralization of regional and national data bases. **NAC Action:** NAC should support this recommendation with the following modifications: The monitoring of network decentralization is of importance to all libraries, not just to special libraries, and the advisory committee would like to see the results reported in a publication like the Annual Review of Information Science and Technology.

- **NCLIS/SLA Recommendation 9:** SLA and NCLIS should be prepared to accommodate the evolving genre of subject networks in their future strategies and plans for increasing library resource sharing activities. **NAC Action:** NAC should support this recommendation and work with NCLIS to accomplish this task.

- **NCLIS/SLA Recommendation 10:** The SLA Networking Committee and affected SLA members should be prepared to meet with representatives of utilities, networks, or cooperatives whenever compromises of operational or membership requirements need to be negotiated to eliminate impediments to information sharing among networks and their users. **NAC Action:** NAC should support this recommendation.

- **NCLIS/SLA Recommendation 11:** The chair of the SLA Networking Committee and SLA's representative to the Library of Congress Network Advisory Committee should be rotated every two years among the corporate for-profit, private not-for-profit, and public agency components of the association. **NAC Action:** NAC action on this recommendation would be inappropriate since it is up to SLA to decide who will represent SLA on the advisory committee; however, SLA, as do all NAC members, will need to consider the membership requirements of the advisory committee.

- **NCLIS/SLA Recommendation 12:** NCLIS and SLA should undertake a legal review of the implications of the antitrust laws as they relate to future subject-oriented library network configurations. **NAC Action:**

NAC should not support this recommendation since it is too vague and there is no expressed demand for this activity.

- **NCLIS/SLA Recommendation 13:** SLA's Board of Directors should establish a committee to review the statistics the association collects in order to improve the association's data collection, reporting, and member-profiling activities. **NAC Action:** NAC should support this recommendation because the data collected could be of value to NAC deliberations.

NOTES

1/ Duane W. Webster and Lenore S. Maruyama, Ownership and Distribution of Bibliographic Data; Highlights of a Meeting Held by the Library of Congress Network Advisory Committee, March 4-5, 1980 (Washington, D.C.: Library of Congress, December 1980, Rev. May 1981), p. 15.

2/ "Network Advisory Committee Open Meeting, June 28, 1981," Library of Congress Information Bulletin (Jan. 22, 1982): 39-44.

3/ Although another open meeting was scheduled to discuss these issues during the annual conference of the American Society for Information Science in October 1981, the advisory committee thought it was unlikely that the results would differ very much.

4/ David P. Lighthill, "Why OCLC Is Implementing a Copyright Protection Program for the Database," OCLC Newsletter, no. 144 (December 1982), p. 3.

5/ "Network Advisory Committee Open Meeting, June 28, 1981," Library of Congress Information Bulletin (Jan. 22, 1982): 39-44.

6/ Ibid., p. 41.

7/ Document Delivery—Background Papers Commissioned by the Network Advisory Committee, Network Planning Paper no. 7 (Washington, D.C.: Library of Congress, 1982) 1 v. (various pagings)

8/ Information Systems Consultants, Inc., Document Delivery in the United States; A Report to the Council on Library Resources (Washington, D.C.: Council on Library Resources, October 1983), p. 62.

9/ Electronic Information Delivery Systems; Proceedings of the Library of Congress Network Advisory Committee Meeting, April 18-20, 1984, Network Planning Paper no. 9 (Washington, D.C.: Library of Congress, 1984) 79 p.

10/ Network Advisory Committee, Public/Private Sector Interactions: The Implications for Networking, Network Planning Paper no. 8 (Washington, D.C.: Library of Congress, 1983) 48 p.

11/ Ibid., p. 21.

12/ The Information Economy in the U.S.: Its Effect on Libraries and Library Networks; Proceedings of the . . . Network Advisory Committee Meeting, May 6-8, 1985, Network Planning Paper no. 10 (Washington, D.C.: Library of Congress, 1985) 59 p.

5. IN RETROSPECT

The more research I do the more I find everything is at random. Somebody goes off in this direction, somebody in that, and who knows what the end result is going to be?
—Harrison E. Salisbury—

The accomplishments of the Network Advisory Committee have been considerable, particularly when viewed from the standpoint of the complex nature of the problems for which it sought solutions and the informal structure of the group. Putting "flesh" on the "skeleton" that comprises the full-scale nationwide network of library and information services envisioned by the National Commission on Libraries and Information Science was not an easy task. At first, the advisory committee limited the scope of its initial efforts to the library bibliographic component so that tasks to provide tangible results over a three-year period for the part of the profession concerned with bibliographic control could be accomplished. On the other hand, dissemination of the results of this work in the form of briefings, articles, reports, etc., was made to the entire library and information service community to the extent possible. Not only did the profession start to think more actively of how the library bibliographic component would affect their work but also of how the document delivery or resource component could be expanded and improved.

But more importantly, the Network Advisory Committee's initial efforts sparked the interest of the nonlibrary sector, especially the for-profit organizations providing library and information services. The advisory committee is probably the only organization of its kind that brings together representatives from all segments of the library and information service community on a regular basis to analyze, discuss, or debate the issues concerning networking and related areas. The divergent views of the representatives are aired, but there is a point at which everyone agrees to disagree and attempts to move into areas where consensus can be reached.

Publication of NCLIS's program document Toward a National Program for Library and Information Services: Goals for Action in 1975 started a train of events. It should be noted, however, that the program document described conditions that existed in the early 1970s, and the plans that included a considerable role for the Federal government in developing a nationwide network have changed. The program document was followed by the study, The Role of the Library of Congress in the Evolving National Network, whose results were incorporated in the early activities of the Network Advisory Committee and supported the idea that the Library of Congress should perform "the major coordinating role in applying technology and acquiring the funding for the technical and standards-related tasks required to link federal, multistate, state, and local systems into . . . (a nationwide) network."1/ This study also included another significant proposal to allow selected libraries access to the Library's Automated Process Information File.2/ At present, the Library of Congress is considering the feasibility of providing access to the records in the process information file, which would include data on the cataloging priority assigned to a title so that other libraries can decide whether to proceed with full cataloging on their own or wait for full cataloging data from the Library of Congress.

Since there has been relatively little criticism of the activities of the Network Advisory Committee with regard to networking in the 1980s, one can assume that earlier criticism was based on fears of a structure imposed from above with scarce funds being dissipated to support such a structure and the role that might be played by the Library of Congress in operating a nationwide network as outlined in the NCLIS program document. In its transition to a catalyst and forum, the Network Advisory Committee no longer seems to be threatening and is filling a need. The Library of Congress, as this nation's single largest provider of bibliographic data, continues to provide its bibliographic services and seeks to improve these services as new technologies emerge.

It should be noted that the Network Advisory Committee is essentially a volunteer group whose continued existence indicates the support and commitment of the representatives' parent organizations. Although the Council on Library Resources has provided funds for a portion of the members' travel expenses and for many of the expenses associated with holding the meetings, including the speakers and commissioned papers, and the Library of Congress has provided the administrative support for the advisory committee, the parent organizations have supported this effort by allowing their personnel to attend the advisory committee meetings, spending time to work on subcommittees, or underwriting the cost of writing or preparing some of the reports.

Roderick G. Swartz, State Librarian, Washington State Library, and the representative of the Western Library Network on the advisory committee, noted: ". . . the committee has finally found a niche for itself in the way it has focused during . . . (these) sessions on a particular trend or development in the library and information community. I think it still has not had the impact as its advisory name connotes in exerting influence on the various organizations, institutions, and governing bodies that can influence library and information services in this country . . . (but) this is perhaps expecting too much out of such a group. . . . I do feel the committee is performing a valuable function now, even though it took a number of rugged sessions to reach that point."

Ronald F. Miller, executive director, Cooperative Library Agency for Systems and Services, made several points about the Network Advisory Committee. He noted that his organization's membership on the committee has "increased my knowledge of current issues so that I can advise my board and staff more intelligently about social, political, and technical issues facing libraries nationally that might affect local or regional decisions. . . . (It has) assured (at least some of the CLASS) members that we have a channel and a responsibility to make known to an elite forum what issues are or will be important to them. Sometimes trends that might otherwise have been obscured are discerned by both NAC members . . . (and) CLASS management simply because we can ask questions and see affirmative nods at NAC meetings. . . . The fact that NAC has a schedule and a participatory program development style has forced us to focus our thinking on issues that are sometimes larger than those we usually confront in our day-to-day work lives—this phenomenon applies to both the members' organizations and the NAC sponsors (the Library of Congress, the Council on Library Resources, and the National Commission on Libraries and Information Science). Also, it's been valuable for the sponsors and the not-for-profit organizations to hear the views of the people representing the for-profit member organizations on NAC because they often have a different perspective on a problem that's been helpful in our

discussions." Mr. Miller noted that although the committee's advisory function is overshadowed by its role as a forum and self-education group, "it would be useful . . . for the sponsors once again to compile a few issues that each or all of them collectively would like advice on. . ." He also noted that many of the proposals made to his organization about its role and goals as a regional network grew out of the advisory committee's early activities in nationwide network planning. Finally: "NAC has helped me a great deal to contribute to and stay in touch with much of the work in library technology and policy development going on in other parts of the nation. Despite highly-touted instant communications, there remains a sense of isolation in various regions of the U.S., particularly in the west. It has given me a sense of continued professional growth and involvement with professional colleagues that would have been very difficult to maintain otherwise."

Thomas G. DiRenzo, vice president, direct marketing and communications, and the representative of the Institute for Scientific Information on the advisory committee, commented on the benefits of his firm's membership on the committee: "It's been beneficial for us to have contact with professionals with similar concerns from other segments of the library and information service community and to hear different views being expressed in a positive way. I've been able to pick up statistics that had not been published elsewhere, and the 'networking' (the informal exchange of information) has been invaluable." Mr. DiRenzo also noted that what has become apparent through these meetings is that the differences between for-profit and not-for-profit organizations are not as great as generally thought, and both kinds of organizations actually share many of the same problems.

Erika Love, director of the University of New Mexico Medical Center Library and the representative of the Medical Library Association, said: "The MLA representative reports to the Board of Directors twice a year . . . (and) the membership at large is informed through regular articles in the MLA News, which summarize and highlight NAC activities of interest to the health sciences library community. Additionally, standing committee chairmen are alerted to projects or activities of NAC relevant to their particular charge or sphere of interest and, if appropriate, materials are shared with these committees. Judging from mail and phone inquiries, three topics struck an especially responsive cord among MLA members: (1) document delivery, (2) telecommunications, and (3) libraries in the information economy. The latter was of great interest, but the practical application for libraries needs further exploration. The value of library and information service to the parent institution and its true cost remain to be identified and measured effectively. . . . Following the article (on the information economy) in the MLA News, . . . numerous requests were received for materials that would provide guidance on how to put highly theoretical concepts into practice. Perhaps such lively interest is, in itself, evidence of NAC's relevance as a body that identifies and examines trends in the dynamic and changeable information environment."

At this writing, the advisory committee is continuing its efforts to assist the National Commission on Libraries and Information Science in NCLIS's revision of its program document by devoting the next meeting in December 1985 to the topic of a common vision for networking. The advisory committee's mode of operation has permitted divergent views to be heard and considered in its deliberations, and it has attempted to bring those views to the attention of

the profession. On issues like telecommunications, the Network Advisory Committee provided the stimulus and impetus for considerable further action by other groups. On other issues like ownership and distribution of bibliographic data, governance, or document delivery where no further action has been taken, there is no doubt that the profession's awareness of these problems has increased. Perhaps this educating function has become the most dominant and lasting contribution of the Network Advisory Committee.

NOTES

1/ Lawrence F. Buckland and William L. Basinski, The Role of the Library of Congress in the Evolving National Network (Washington, D.C.: Library of Congress, 1978), p. 4.

2/ Ibid., p. 22-23. The report recommended that the participants in the Library's National Program for Acquisitions and Cataloging be part of a pilot project that would have access to LC files, including the Automated Process Information File, to facilitate the reporting, acquisitions, and cataloging processes that were part of the program.

APPENDIX A

CHRONOLOGY

NETWORK ADVISORY GROUP

April 12, 1976	First meeting of network representatives at the Library of Congress
August 9, 1976	Second meeting of network representatives; formally named Network Advisory Group
December 3-4, 1976	Third meeting of Network Advisory Group
April 11-12, 1977	Fourth meeting of Network Advisory Group
April 26, 1977	Establishment of Network Advisory Committee announced
June 1977	Toward a National Library and Information Service Network: The Library Bibliographic Component published
June 18, 1977	Briefing at ALA annual conference, Detroit

NETWORK ADVISORY COMMITTEE

November 28-29, 1977	First meeting of Network Advisory Committee
May 18-19, 1977	Second meeting of Network Advisory Committee
June 25, 1977	Briefing at ALA annual conference, Chicago
November 20, 1978	Third meeting of Network Advisory Committee
April 10, 1979	Fourth meeting of Network Advisory Committee
September 25, 1979	Fifth meeting of Network Advisory Committee

NETWORK ADVISORY COMMITTEE PROGRAM MEETINGS

March 4-5, 1980	Ownership and Distribution of Bibliographic Data
October 1-2, 1980	Nationwide Network Governance
June 28, 1981	Open meeting, ALA annual conference, San Francisco, on Ownership and Distribution of Bibliographic Data and Nationwide Network Governance
September 15-17, 1981	Resource Sharing
March 9-11, 1982	Document Delivery
June 21-23, 1982	Document Delivery (Commercial Sector)
October 25-27, 1982	Public/Private Sector Issues and Concerns Related to Networking
April 25-27, 1983	Emerging Statwide Computerized Bibliographic Networks
October 23-25, 1983	Telecommunications Systems—Industry Structure, Evolution, and Degree of Regulation
April 18-20, 1984	Electronic Information Delivery Systems
November 14-16, 1984	Information Economy in the U.S.: Its Effect on Libraries and Library Networks
May 6-8, 1985	Key Issues in the Networking Field
December 9-11, 1985 (planned)	Common Vision for Networking

APPENDIX B

SELECTIVE BIBLIOGRAPHY

The following items constitute the "official" bibliography of items published by or for the Network Advisory Committee and the reports issued by the Library of Congress Network Development and MARC Standards Office related to networking. This bibliography is selective because it does not include the many reports or summaries appearing in the professional journals, newsletters, or other publications of member organizations. Minutes of the program meetings held from 1980 through 1983 are also available by writing to the Secretariat, Network Advisory Committee, Network Development and MARC Standards Office, Processing Services, LM-327, Library of Congress, Washington, D.C. 20540.

SUMMARIES/REPORTS OF MEETINGS

Summaries or reports of Network Advisory Committee meetings have been included in the following issues of the Library of Congress Information Bulletin:

Meeting Dates	LCIB Issue
April 12, 1976	June 4, 1976, p. 325
August 9, 1976	September 24, 1976, p. 585
December 3-4, 1976	January 14, 1977, pp. 18-19
April 11-12, 1977	May 27, 1977, pp. 347-48
November 28-29, 1977	January 20, 1978, pp. 64-66
May 18-19, 1978	July 5, 1978, pp. 398-400
November 20, 1978	March 2, 1979, pp. 73-76
April 10, 1979	June 22, 1979, pp. 232-33
September 25, 1979	November 23, 1979, pp. 483-84
March 4-5, 1980 (Ownership and Distribution of Bibliographic Data)	May 30, 1980, pp. 186-88
October 23-25, 1983 (Telecommunications)	February 20, 1984, pp. 50-52

Meeting Dates	LCIB Issue
April 18-20, 1984 (Electronic Information Delivery Systems)	June 18, 1984, pp. 214-16
November 14-16, 1984 (Information Economy)	February 4, 1985, pp. 21-23
May 6-8, 1985 (Key Issues in Networking)	August 5, 1985, pp. 214 ff.

REPORTS OR PAPERS

The following titles, listed in chronological order by publication date, are available as of July 1985 from the Customer Services Section, Cataloging Distribution Service, Library of Congress, Washington, D.C. 20541.

Toward a National Library and Information Service Network: The Library Bibliographic Component. Preliminary edition. Prepared by the Library of Congress Network Advisory Group. Edited by Henriette D. Avram and Lenore S. Maruyama. (Washington, D.C.: Library of Congress, June 1977). 54 p. Single copy available without charge.

A Nationwide Location Data Base and Service. Prepared by Brett Butler. (Washington, D.C.: Library of Congress, 1978). 66 p. (Network Planning Paper no. 1)

A Glossary for Library Networking. Prepared by Dataflow Systems. (Washington, D.C.: Library of Congress, 1978). 34 p. (Network Planning Paper no. 2)

Initial Considerations for a Nationwide Data Base. Prepared by Edwin J. Buchinski. Edited and revised by Henriette D. Avram and Sally H. McCallum. (Washington, D.C.: Library of Congress, 1978). 56 p. (Network Planning Paper no. 3)

Message Delivery Systems for the National Library and Information Service Network: General Requirements. Prepared by the Network Technical Architecture Group and edited by David C. Hartmann. (Washington, D.C.: Library of Congress, 1978). 35 p. (Network Planning Paper no. 4)

Study of Message Text Formats: Bibliographic Search Queries. Prepared by Philip L. Long. (Washington, D.C.: Library of Congress, 1979). 28 p. (Network Planning Paper no. 5)

National Union Catalog Experience: Implications for Network Planning. Prepared by Raymond F. Vondran. (Washington, D.C.: Library of Congress, 1980). 51 p. (Network Planning Paper no. 6)

Ownership and Distribution of Bibliographic Data; Highlights of a Meeting Held by the . . . Network Advisory Committee, March 4-5, 1980. Working document. Prepared by Duane E. Webster and Lenore S. Maruyama. (Washington, D.C.:

Library of Congress, December 1980, Rev. May 1981). 17 p. Single copy available without charge.

A Nationwide Network: Development, Governance, Support; Discussion Paper . . . from a Meeting Held by the . . . Network Advisory Committee, October 1-2, 1980. Working document. (Washington, D.C.: Library of Congress, January 1981, Rev. May 1981). 15 p. Single copy available without charge.

Document Delivery—Background Papers Commissioned by the Network Advisory Committee. (Washington, D.C.: Library of Congress, 1982). 1 v. (various pagings) (Network Planning Paper no. 7)

Public/Private Sector Interactions: The Implications for Networking; A Discussion Report Prepared by the Network Advisory Committee. (Washington, D.C.: Library of Congress, 1983). 48 p. (Network Planning Paper no. 8)

Electronic Information Delivery Systems; Proceedings of the . . . Network Advisory Committee Meeting, April 18-20, 1984. (Washington, D.C.: Library of Congress, 1984). 79 p. (Network Planning Paper no. 9)

The Information Economy in the U.S.: Its Effect on Libraries and Library Networks; Proceedings of the . . . Network Advisory Committee Meeting, November 14-16, 1984. (Washington, D.C.: Library of Congress, 1985). 59 p. (Network Planning Paper no. 10)

Key Issues in the Networking Field; Proceedings of the . . . Network Advisory Committee Meeting, May 6-8, 1985. (In press) (Network Planning Paper no. 12)

APPENDIX C

NETWORK ADVISORY COMMITTEE MEMBERS

The following list of institutional members of the Network Advisory Committee covers the period from April 1976 to the present, with the year indicating the start (or end) of their membership. This list provides only the current names of the organizations. In 1981, the advisory committee instituted a system allowing member organizations to appoint an alternate in addition to an official representative, so the names of both, where applicable, are included in this list. An asterisk (*) after the name of a representative indicates that the person is deceased.

Organization	Representatives
American Library Association, 1977-	Carol C. Henderson, 1981- Joseph F. Shubert (New York State Library), 1982- Robert Wedgeworth, 1977-81
American Society for Information Science, 1979-	Ward Shaw (Colorado Alliance for Research Libraries), 1979-
AMIGOS Bibliographic Council, 1976-	Ann Bowden (Austin Public Library), 1981- James H. Kennedy, 1976-83 Paul Vassallo (University of New Mexico), 1982 Louella V. Wetherbee, 1984-
Association of American Publishers, 1979-	Thomas D. McKee, 1981- Sandra K. Paul (SKP Associates), 1979-
Association of Research Libraries, 1977-	Richard M. Dougherty (University of Michigan), 1977-81 Susan K. Martin (Johns Hopkins University), 1982- William J. Studer (Ohio State University), 1982-
BALLOTS, 1976-78	Edward E. Shaw, 1977-78 David C. Weber (Stanford University), 1976-77
Bibliographical Center for Research, 1977-	David H. Brunell, 1984- Anne Marie F. Falsone (Colorado State Library), 1983- JoAn S. Segal, 1982-84 Donald B. Simpson, 1977-81

Organization	Representative
Chief Officers of State Library Agencies, 1978-	Patricia Broderick (Pennsylvania State Library), 1979 Anne Marie F. Falsone (Colorado State Library), 1979- Anthony W. Miele (Alabama State Library), 1982-84 Fay Zipkowitz (Rhode Island Dept. of State Library Services), 1985-
Cooperative Library Agency for Systems and Services, 1977-	Thomas E. Alford (Los Angeles Public Library), 1984- Ronald F. Miller, 1977-
Council for Computerized Library Networks, 1976-80?	James Dodson (University of Texas, Dallas), 1976-77 Barbara E. Markuson (Indiana Cooperative Library Services Authority), 1977-80 Mary Jane Reed (Washington State Library), 1977-78 Charles Stevens (SOLINET), 1976 *
Council on Library Resources, 1976-	Fred C. Cole, 1976-77 Warren J. Haas, 1978- C. Lee Jones, 1978- Lawrence G. Livingston, 1976-77 *
Federal Library and Information Center Committee, 1976-	D. Lee Power, 1984- James P. Riley, 1976- Alphonse F. Trezza, 1982
Information Industry Association, 1979-	Brett Butler (Infour), 1982- Betty Davis (Informatics General Corporation), 1983- Robert Willard, 1979-81 Paul Zurkowski, 1979-81
Institute for Scientific Information, 1982-	Thomas G. DiRenzo, 1982- Richard Kollin, 1982-84 Laura Weisenberg, 1985-
Library of Congress, 1976-	Henriette D. Avram, 1976- Sigrid G. Harriman, 1983- Lucinda E. Leonard, 1976 Lenore S. Maruyama, 1976-83 Carol A. Nemeyer, 1978-80 William J. Welsh, 1976-81
Medical Library Association, 1978-	Erika Love (University of New Mexico), 1978- Cyril C. Feng (University of Maryland, Baltimore), 1984-

Organization	Representative
Midwest Region Library Network, 1976-83	T. John Metz, 1976-79 James E. Skipper, 1982-83 Joseph Treyz (University of Wisconsin), 1980-81
Minnesota Interlibrary Telecommunications Exchange, 1982-	William DeJohn, 1984- Charlene Mason, 1983-84 Alice E. Wilcox, 1982-83
National Agricultural Library, 1977-	Pamela Q. Andre, 1985- Richard A. Farley, 1977-79 Joseph J. Howard, 1983 Wallace C. Olson, 1979-83 Samuel T. Waters, 1980-
National Commission on Libraries and Information Science, 1976-	Toni Carbo Bearman, 1982- Diane Y. Rafferty, 1984- Alphonse F. Trezza, 1976-81
National Federation of Abstracting and Information Services, 1979-	Toni Carbo Bearman, 1979 M. Lynne Neufeld, 1979- James L. Wood (Chemical Abstracts Service), 1981-
National Library of Medicine, 1976-	Lois Ann Colaianni, 1982- Sheldon Kotzin, 1983- Davis McCarn, 1976-78 Grace McCarn, 1978-81
NELINET, Inc., 1976-	Anne C. Edmonds (Mount Holyoke College), 1984- John H. Linford, 1978-82 Ronald F. Miller, 1976-77 Laima Mockus, 1982-
OCLC, Inc., 1976-	Mary Ellen Jacob, 1982- Frederick G. Kilgour, 1976-81 James E. Rush, 1980-81 Paul Schrank, 1981-
Research Libraries Group, 1976-	John Heyeck, 1982 Tina Kass, 1984 C. James Schmidt, 1982- Edward E. Shaw, 1979-81 James E. Skipper, 1976-78
Southeastern Library Network, 1976-	James Boykin (University of North Carolina at Charlotte), 1977 James F. Govan (University of North Carolina), 1976-77 Frank P. Grisham, 1982-

Organization	Representatives
	Lee Handley, 1979-81 Betty Taylor (University of Florida), 1984- Charles Stevens, 1978 *
Special Libraries Association, 1978-	Bette Dillehay (A. H. Robins Company), 1985- Irving M. Klempner (SUNY, Albany), 1978-82 Barbara M. Robinson, 1982-84
Universal Serials & Book Exchange, Inc., 1984-	Mary W. Ghikas, 1984-
University of Chicago, 1976-	Stanley McElderry, 1976-79 Charles T. Payne, 1980- Martin D. Runkle, 1980-
Western Interstate Library Coordinating Organization, 1976-77	Maryann Duggan, 1976 Eleanor Montague, 1976-77
Western Library Network, 1976-	Ray DeBuse, 1982- Roderick G. Swartz (Washington State Library), 1976-

Observers	Representatives
American Association of Law Libraries, 1979-	Betty Taylor (University of Florida), 1979-
Carnegie Corporation of New York, 1977-	Richard Greene, 1983- Richard H. Sullivan, 1977-83
National Endowment for the Humanities, 1976-	Margaret Child, 1976-82 Jeffrey Field, 1982-

Chair: Henriette D. Avram
Assistant Librarian for Processing Services
Library of Congress

Secretariat: Sigrid G. Harriman
Network Development and MARC Standards Office
Processing Services
Library of Congress

Staff members from the following organizations have also provided considerable support to the Network Advisory Committee:

Council on Library Resources	Deanna Marcus, 1983-
National Commission on Libraries and Information Science	Willam Mathews, 1976-79 Ruth L. Tighe, 1976-79

APPENDIX D

CRITERIA FOR MEMBERSHIP (APRIL 1983)

I. Goals and Objectives of the Network Advisory Committee (NAC):

(1) Advise the Librarian of Congress on the role of the Library in a nationwide network;

(2) Provide input to the Council on Library Resources on the design and development of a nationwide network;

(3) Serve as a principal focal point and forum regarding national network planning and policy; and

(4) Serve as a sounding board and a forum for the National Commission on Libraries and Information Science on matters of interest to NCLIS.

II. Eligibility for Membership

Associations or organizations formally constituted and functioning in the public and private (for-profit or not-for-profit) sector engaged in library and information service networking or network development, or having an impact on the development of a nationwide library and information service network and can make a unique contribution to NAC, are eligible for membership.

As more organizations are expected to become part of networking, potential NAC member candidates expand rapidly. As noted above, NAC is looking for institutions that can make unique contributions. Consequently, in addition to the general criteria above, NAC has also established categories of membership and has designated certain categories as representative of classes of institutions. In such cases, NAC will maintain a roster of candidate institutions that have indicated interest in NAC. These institutions will receive all NAC materials, but attendance at meetings will be limited to those designated full members.

The number of institutions eligible within each category is given in the attached table. Where membership is limited, NAC will select current members from those indicating interest. Full membership will be for a period of two years. If there are more candidates than positions, NAC membership will rotate with new candidates replacing the earlier members on a two-year cycle. All candidate institutions will receive NAC publications and communications enabling those not currently members to maintain an interest in and of NAC and its activities.

III. Requirements for Membership

Members are expected to attend NAC meetings regularly and to participate in committee activities. Each association or organization shall appoint one representative and a designated alternate to serve continuously for a minimum of two years. The representative shall attend the meetings and be the

recognized voting member; however, if the representative cannot be present at a NAC meeting, the designated alternate may attend the meeting and will be recognized as the voting member. Members are responsible for funding the participation of their representative. Members are also responsible for reporting on each NAC meeting to their organizations and for informing the NAC membership of activities from their organizations of interest to NAC.

IV. Application for Membership

Associations or organizations applying for membership are required to submit their request in writing to the NAC chair indicating their interest and justification for membership. They must show the impact of their activities and programs on the developing nationwide library and information service network and the unique contribution they can make to NAC.

V. Approval of Membership Applications

All applications for membership shall be submitted to the NAC Membership Subcommittee. Rejection of membership applications by the subcommittee must indicate, in writing, the reasons for such action. The Membership Subcommittee shall consist of representatives of the public and private sector of NAC.

VI. Termination of Membership

To terminate membership, a member must submit the decision in writing to the NAC chair. A member that becomes inactive by not attending two consecutive NAC meetings or is unwilling to participate in NAC activities will forfeit membership after being given due notice by the chair of the Network Advisory Committee.

VII. Observers

Official observers are those who are invited to attend NAC meetings by the chair of NAC. The official observers may participate in meeting discussions; however, they may not vote.

NETWORK ADVISORY COMMITTEE—MEMBERSHIP CATEGORIES

	Categories	Number	Members	Potential Members
1.	National Professional Membership Associations	All	ALA, ASIS, MLA, SLA	AALL, MLA (Music)
2.	Trade and Institutional Associations	All	ARL, AAP, COSLA, IIA, NFAIS, USBE	CRL
3.	National Libraries/Federal Information Agencies	All	LC, FLICC, NAL, NLM, NCLIS	GPO, NTIS
4.	National Bibliographic Networks 1/	All	OCLC, RLG/RLIN	
5.	Regional/Special Bibliographic System Operators 2/	4	AMIGOS, CLASS, SOLINET, WLN	SUNY, Illinois (LCS), HALS (Houston), CARL, Irving
6.	Network Service Organizations 3/	4	BCR, MINITEX, NELINET	AFLI, CAPCON, CCLC, FAUL, ILLINET, INCOLSA, MLC, NEBASE, OHIONET, PALINET, PRLC, WLC
7.	National Reference Systems 4/	8	ISI	BRS, SDC, Dialog, Mead, CAS, Source, COMPUSERVE, NY Times INFOBANK
8.	Individual Library Systems	1	U. of Chicago	
9.	Observers		At discretion of chair	
10.	Organizations not Included			Catholic Library Association, Subgroups of ALA

1/ Computer-based services organized by and for libraries, wherein the library users contribute to and modify the resource data bases used in the provision of various bibliographic services.

2/ Organizations that provide various bibliographic services by operating their own system.

3/ Organizations that act as a middle man by procuring services from the bibliographic networks and others for their users.

4/ Computer/based, publicly available information services containing bibliographic and other machine-readable data where the contents are created by the system or provided to it by data base publishers and where their users ordinarily do not modify the data bases provided.

NETWORK PLANNING PAPERS

No. 1 Butler, Brett. A Nationwide Location Data Base and Service. (Washington, Library of Congress, 1978). 66 p.

No. 2 Dataflow Systems. A Glossary for Library Networking. (Washington, Library of Congress, 1978). 34 p.

No. 3 Buchinski, Edwin J. Initial Considerations for a Nationwide Data Base. (Washington, Library of Congress, 1978). 56 p.

No. 4 Network Technical Architecture Group. Message Delivery System for the National Library and Information Service Network: General Requirements. (Washington, Library of Congress, 1978). 35 p.

No. 5 Long, Philip L. Study of Message Text Formats: Bibliographic Search Queries. (Washington, Library of Congress, 1979). 28 p.

No. 6 Vondran, Raymond F., 1946- National Union Catalog Experience: Implications for Network Planning. (Washington, Library of Congress, 1980). 51 p.

No. 7 Document Delivery--Background Papers Commissioned by the Network Advisory Committee. (Washington, Library of Congress, 1982). various pagings.

No. 8 Public/Private Sector Interactions: The Implications for Networking. (Washington, Library of Congress, 1983). 48 p.

No. 9 Electronic Information Delivery Systems: Proceedings of the Library of Congress Network Advisory Committee Meeting, April 18-20, 1984. (Washington, Library of Congress, 1984). 79 p.

No.10 The Information Economy in the U.S.: Its Effect on Libraries and Library Networks: Proceedings of the Library of Congress Network Advisory Committee Meeting, November 14-16, 1984. (Washington, Library of Congress, 1985). 59 p.

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